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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/781,080

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Santosh Kumar Sadanada

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08/29/2008

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EXAMINER

LEE, ANDREW CHUNG CHEUNG

ART UNIT

PAPER NUMBER

2619

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/781,080	Applicant(s) SADANADA, SANTOSH KUMAR	
	Examiner Andrew C. Lee	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Claims 1 - 32 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 8, 10 – 18, 20 – 21, 23 – 24, 26 – 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walter et al. (US 20020176131 A1) in view of Shiragaki et al. (US 6657952 B1).

Regarding **claims 1, 11**, Walters et al. disclose a method, apparatus performed in an access node of a wave division multiplexing optical network (Fig. 1, paragraphs [0073], [0074]), the method, apparatus comprising: receiving a demand for allocating a first protection path that meets a first set of disjointness constraints with respect to a first working path according to a first protection scheme having a first priority (“1+1 protection”; paragraphs [0005], [0289], [0486]); in response to the demand, locating a second protection path that meets a second set of disjointness constraints with respect to a second working path according to a second protection scheme having a second priority (“1:1 protection”; paragraphs [0006], [0289], [0487]); and Walter et al. disclose implicitly assigning the second protection path as a protection path to the first working

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path if the first priority of the first protection scheme is higher than the second priority of the second protection scheme (“two lightpaths are setup with one path supporting high priority data traffic and the other supporting lower priority, pre-emptable traffic” interpreted as assigning the second protection path as a protection path to the first working path; paragraph [0487], [0006]).

Walter et al. do not disclose explicitly assigning the second protection path as a protection path to the first working path if the first priority of the first protection scheme is higher than the second priority of the second protection scheme.

Shiragaki et al. in the same field of endeavor teach assigning the second protection path as a protection path to the first working path if the first priority of the first protection scheme is higher than the second priority of the second protection scheme (“the extra traffic path between nodes is cleared and a short-haul protection path is established for using it”; Fig. 1, Fig. 8, Fig. 11A, Fig. 11B, col. 2, lines 51 – 67, col. 3, lines 1 – 2, col. 12, lines 6 – 25).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Walter et al. to include the features of assigning the second protection path as a protection path to the first working path if the first priority of the first protection scheme is higher than the second priority of the second protection scheme as taught by Shiragaki et al. One of ordinary skill in the art would be motivated to do so for providing a ring topology network which requires short-length fault recovery routes and ensures high efficient utilization of transmission mediums (as suggested by Shiragaki et al., see col. 2, lines 3 – 5).

Regarding claims 2, 12, Walters et al. disclose the method, and apparatus claimed further comprising allocating another path as a protection path for the second working path if the second protection path is assigned to the first working path (Fig. 53, paragraph [0508]).

Regarding claims 3, 13, Walters et al. disclose the method, apparatus claimed wherein the priorities of the first and second protection schemes are determined based on a predetermined protection scheme priority order (paragraph [0289]).

Regarding claims 4, 14, Walters et al. disclose the method, apparatus claimed wherein the predetermined protection scheme priority order is specified by an owner of the optical network ("service provider"; paragraphs [0274], [0275]).

Regarding claims 5, 15, 28, 31, Walters et al. disclose the method, apparatus claimed wherein the predetermined protection scheme priority order comprise an order from high to low priorities as of 1+1, 1:1, 1:N, and reroutable (paragraph [0289]).

Regarding claims 6, 16, 29, 32, Walters et al. disclose the method, apparatus claimed wherein the second protection path is searched and located according to the predetermined protection scheme priority order from low to high priorities (paragraph [0288]).

Regarding claims 7, 17, Walters et al. disclose the method, apparatus claimed wherein the second protection path is searched and located further according to a predetermined disjointness order having a plurality of disjointness preferences from most preferred disjointness to least preferred disjointness ("duplicate data stream (1+1),

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dedicated and carry a pre-emptable low priority data stream (1:1), or shared (1:N)” interpreted as according to a predetermined disjointness order; paragraph [0289]).

Regarding claims 8, 18, Walters et al. disclose the method, apparatus claimed wherein the predetermined disjointness order is specified by an owner of the network (paragraphs [0274], [0275], [0287]).

Regarding claims 10, 20, Walters et al. disclose implicitly the method, apparatus claimed wherein the second protection path is searched and located according to the predetermined disjointness order from the most preferred disjointness to the least preferred disjointness with respect to the first working path (“two lightpaths are setup with one path supporting high priority data traffic and the other supporting lower priority, pre-emptable traffic” interpreted as assigning the second protection path as a protection path to the first working path; paragraphs [0485], [0487], [0006]).

Walters et al. do not disclose explicitly wherein the second protection path is searched and located according to the predetermined disjointness order from the most preferred disjointness to the least preferred disjointness with respect to the first working path.

Shiragaki et al. in the same field of endeavor teach wherein the second protection path is searched and located according to the predetermined disjointness order from the most preferred disjointness to the least preferred disjointness with respect to the first working path (“the extra traffic path between nodes is cleared and a short-haul protection path is established for using it”; Fig. 1, Fig. 8, Fig. 11A, Fig. 11B, col. 2, lines 51 – 67, col. 3, lines 1 – 2, col. 12, lines 6 – 25).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Walter et al. to include the features of wherein the second protection path is searched and located according to the predetermined disjointness order from the most preferred disjointness to the least preferred disjointness with respect to the first working path as taught by Shiragaki et al. One of ordinary skill in the art would be motivated to do so for providing a ring topology network which requires short-length fault recovery routes and ensures high efficient utilization of transmission mediums (as suggested by Shiragaki et al., see col. 2, lines 3 – 5).

Regarding **claims 21, 24** Walters et al. disclose a method, apparatus performed in an access node of a wave division multiplexing optical network (Fig. 1, paragraphs [0073], [0074]), the method, apparatus comprising: searching, in response to a demand for a protection path that meets a first set of disjointness constraints with respect to a working path, in a database a first protection path that meets the first set of disjointness constraints (“1+1 path protection” paragraphs [0486]); and Walters et al. disclose implicitly if the first protection path cannot be located, searching a second protection that meets a second set of disjointness constraints, the second set of disjointness constraints being determined according to a disjointness preference order specified by an owner of the network (“1:1 path protection”; two lightpaths are setup with one path supporting high priority data traffic and the other supporting lower priority, pre-emptable traffic” interpreted as assigning the second protection path as a protection path to the

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first working path; paragraphs [0485], [0487], [0006]; “service provider”; paragraphs [0274], [0275]).

Walters et al. do not teach explicitly if the first protection path cannot be located, searching a second protection that meets a second set of disjointness constraints, the second set of disjointness constraints being determined according to a disjointness preference order specified by an owner of the network.

Shiragaki et al. in the same field of endeavor teach if the first protection path cannot be located, searching a second protection that meets a second set of disjointness constraints, the second set of disjointness constraints being determined according to a disjointness preference order specified by an owner of the network (“the extra traffic path between nodes is cleared and a short-haul protection path is established for using it”; Fig. 1, Fig. 8, Fig. 11A, Fig. 11B, col. 2, lines 51 – 67, col. 3, lines 1 – 2, col. 12, lines 6 – 25).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Walter et al. to include the features of if the first protection path cannot be located, searching a second protection that meets a second set of disjointness constraints, the second set of disjointness constraints being determined according to a disjointness preference order specified by an owner of the network as taught by Shiragaki et al. One of ordinary skill in the art would be motivated to do so for providing a ring topology network which requires short-length fault recovery routes and ensures high efficient utilization of transmission mediums (as suggested by Shiragaki et al., see col. 2, lines 3 – 5).

Regarding claims 23, 26 Walters et al. disclose the method, apparatus claimed wherein the second protection path is searched from the most preferred disjointness to the least preferred disjointness with respect to the working path (“duplicate data stream (1+1), dedicated and carry a pre-emptable low priority data stream (1:1), or shared (1:N)” interpreted second protection path is searched from the most preferred disjointness to the least preferred disjointness; paragraph [0289).

Regarding **claims 27**, Walters et al. disclose a method performed in an access node of a wave division multiplexing optical network (Fig. 1, paragraphs [0073], [0074]), the method comprising: receiving a demand for a first protection path associated with a first working path according to a first protection scheme having a first priority (“1+1 protection”; paragraphs [0005], [0486]), and Walters et al. disclose implicitly preempting a second protection path associated with a second working path according to a second protection scheme having a second priority, if the first priority is higher than a second priority according to a protection scheme priority order specified by an owner of the network (“1:1 protection, two lightpaths are setup with one path supporting high priority data traffic and the other supporting lower priority, pre-emptable traffic” interpreted as assigning the second protection path as a protection path to the first working path; paragraphs [0485], [0487], [0006]).

Walters et al. do not teach explicitly preempting a second protection path associated with a second working path according to a second protection scheme having a second priority, if the first priority is higher than a second priority according to a protection scheme priority order specified by an owner of the network.

Shiragaki et al. in the same field of endeavor teach preempting a second protection path associated with a second working path according to a second protection scheme having a second priority, if the first priority is higher than a second priority according to a protection scheme priority order specified by an owner of the network (“the extra traffic path between nodes is cleared and a short-haul protection path is established for using it”; Fig. 1, Fig. 8, Fig. 11A, Fig. 11B, col. 2, lines 51 – 67, col. 3, lines 1 – 2, col. 12, lines 6 – 25).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Walter et al. to include the features of preempting a second protection path associated with a second working path according to a second protection scheme having a second priority, if the first priority is higher than a second priority according to a protection scheme priority order specified by an owner of the network as taught by Shiragaki et al. One of ordinary skill in the art would be motivated to do so for providing a ring topology network which requires short-length fault recovery routes and ensures high efficient utilization of transmission mediums (as suggested by Shiragaki et al., see col. 2, lines 3 – 5).

Regarding **claims 30**, Walters et al. disclose an apparatus, comprising: an access node, to be coupled in a wavelength division multiplexing optical network (Fig. 1, paragraphs [0073], [0074]), including, a database to store a representation of available paths from the access node to reachable destinations, the available paths including one or more working paths protected by one or more protection paths (Fig. 34, paragraph [0304]), [0305]), and a routing module to receive a demand for a first protection path

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associated with a first working path according to a first protection scheme having a first priority (“routing component”; Fig. 41, paragraphs [0405] - [0407], “1+1 protection”; paragraphs [0005], [0486], [0502]), and Walters et al. disclose implicitly preempt a second protection path associated with a second working path according to a second protection scheme having a second priority, if the first priority is higher than a second priority according to a protection scheme priority order specified by an owner of the network (“1:1 protection”; paragraphs [0006], [0487],[0508], “service provider”; paragraphs [0274], [0275], [0289]).

Walters et al. do not teach explicitly preempt a second protection path associated with a second working path according to a second protection scheme having a second priority, if the first priority is higher than a second priority according to a protection scheme priority order specified by an owner of the network.

Shiragaki et al. in the same field of endeavor teach preempt a second protection path associated with a second working path according to a second protection scheme having a second priority, if the first priority is higher than a second priority according to a protection scheme priority order specified by an owner of the network (“the extra traffic path between nodes is cleared and a short-haul protection path is established for using it”; Fig. 1, Fig. 8, Fig. 11A, Fig. 11B, col. 2, lines 51 – 67, col. 3, lines 1 – 2, col. 12, lines 6 – 25).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Walter et al. to include the features of preempt a second protection path associated with a second working path according to a

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second protection scheme having a second priority, if the first priority is higher than a second priority according to a protection scheme priority order specified by an owner of the network as taught by Shiragaki et al. One of ordinary skill in the art would be motivated to do so for providing a ring topology network which requires short-length fault recovery routes and ensures high efficient utilization of transmission mediums (as suggested by Shiragaki et al., see col. 2, lines 3 – 5).

4. Claims 9, 19, 22, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over (US 20020176131 A1) and Shiragaki et al. (US 6657952 B1) as applied to claims 1 -8, 10 – 18, 20 – 21, 23 – 24, 26 – 32 above, and further in view of Wong et al. (US 20030193898 A1).

Regarding claims 9, 19, 22, 25, Walters et al. disclose the method, apparatus claimed wherein the second protection path is searched and located further according to a predetermined disjointness order having a plurality of disjointness preferences from most preferred disjointness to least preferred disjointness (“duplicate data stream (1+1), dedicated and carry a pre-emptable low priority data stream (1:1), or shared (1:N)” interpreted as according to a predetermined disjointness order; paragraph [0289]).

Walters et al. and Shiragaki et al. do not disclose explicitly the method, apparatus claimed wherein the predetermined disjointness order comprises an order from the most preferred to the least preferred as of fully node disjointness, fully link disjointness, maximally node disjointness, and maximally link disjointness.

Wong et al. in the same field of endeavor teach the predetermined disjointness

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order comprises an order from the most preferred to the least preferred as of fully node disjointness, fully link disjointness, maximally node disjointness, and maximally link disjointness (paragraphs [0005], [0023]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Walters et al. and Shiragaki et al. to include the features of the predetermined disjointness order comprises an order from the most preferred to the least preferred as of fully node disjointness, fully link disjointness, maximally node disjointness, and maximally link disjointness as taught by Wong et al. in order to a method and apparatus for efficiency and reliable generation of maximally disjoint shortest paths in a network (as suggested by Wong et al., see paragraph [0022])

Response to Arguments

5. Applicant's arguments filed on 5/19/2008 with respect to claims 1 – 32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Ellinas et al. (US 6760302 B1).
- b) Battou et al. (US 2003/0163555 A1).
- c) Shabtay et al. (US 7197008 B1).

d) Lund et al. (US 6999468 B2).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571)272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew C Lee/
Examiner, Art Unit 2619
<8/26/2008>

/Edan Orgad/
Supervisory Patent Examiner, Art Unit 2619